NSN 6520-00-181-7349
Chair and Stool Unit,
Dental Operating, Portable
Contract No. DLA120-83-C-4220

Model CM-185 Field Chair and Stool

Starting Serial No. 2001

SYNTEX

DENTAL PRODUCTS

SYNTEX DENTAL PRODUCTS, INC.
DEN-TAL-EZ EQUIPMENT
VALLEY FORGE, PENNSYLVANIA

Model CM-185 FIELD CHAIR and STOOL INSTALLATION and REPAIR MANUAL

TABLE OF CONTENTS

Section I. INTRODUCTION

General 2
Description 2
Specifications 3

Section II. INSTALLATION, OPERATION and REPACKING

Unpacking and Assembly 4
Permanent Installation 7
Operation 7
Disassembly for Repacking 7

Section III. FIELD SERVICE INSTRUCTIONS

Routine Maintenance 9
Base Assembly 9
Hydraulic Equipment 9
Chair Top Assembly 10
Seat Control 11
Hydrolok 11
General 11
Stool 11

Section IV. PARTS LISTS and ILLUSTRATIONS

Chair, Base & Stool Replacement Parts 12
Figure #6 - Cut-a-way View of Chair 13
Base Assembly 14
Figure #7 - Base Assembly 15
Support Pump Assembly 16
Figure #8 - Support Pump Assembly 17
Pump Assembly 18
Figure #9 - Pump Assembly 19
Piston & Hose Assembly 20
Figure #10 - Piston & Hose Assembly 21
Carrying Case 22
Figure #11 - Carrying Case 22
Additions, Changes 23
MAC, MPL, ASL 24-34

Section I. INTRODUCTION

A. GENERAL

The portable Field Module Series CM-185 (figure 1) was designed by Den-Tal-Ez, Syntex Dental Products, Inc., Valley Forge, PA, to offer the maximum in dentist and patient comfort. It is a lightweight, sturdy module chair top, base and operator stool. The entire module is housed in an air tight fiberglass container and can be quickly set up for use in locations away from established facilities.

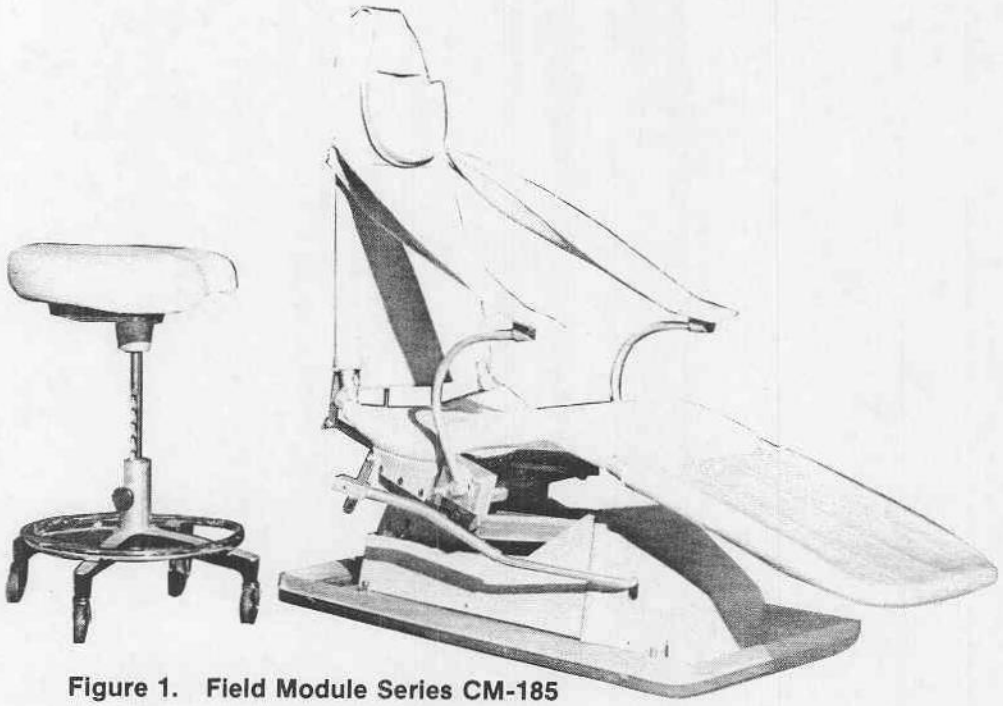


Figure 1. Field Module Series CM-185

B. DESCRIPTION

The base (lift) is mounted on a rectangular floor plate and when pivoted through its travel provides the means to raise and lower the chair and patient to convenient working height. The motivation force is developed by a hydraulic power unit consisting of a foot-operated hydraulic pump and cylinder. Raising the base is accomplished by pumping the foot lever. The base is lowered by use of a foot-operated lever at the rear of the base.

The chair top consists of a seat, back, and toe. The seat is mounted on a pivot that allows the seat to be tilted in two positions in respect to the base floor plate. A down position is used primarily for storage in the case. The up position is used when a patient is in the chair. The positions are accomplished by operating a release lever located under the seat. The chair back adjustment is accomplished by depressing a button located at the top of the back which operates a spring-motivated hydraulic mechanism.

The stool provides seating for the doctor during operating procedures. The adjustable height swivel seat is mounted on a base with casters.

The entire chair assembly can be used while attached to the container base as shown in figure 1 or the chair and base can be removed from the container base if permanent position is desired. The base plate is provided with mounting facility for Light Set, Dental Operating NSN 6520-00-000-0158.

C. SPECIFICATIONS

Weight - Chair and Base (NSN 6520-01-136-5831) ..... 110 pounds
Stool (NSN 6520-01-136-5840) ..... 18 pounds
Container (NSN 6520-01-136-5826) ..... 44 pounds
Total Module and Container ..... 172 pounds

Range of Travel and Angular Adjustment (Refer to figure 2)

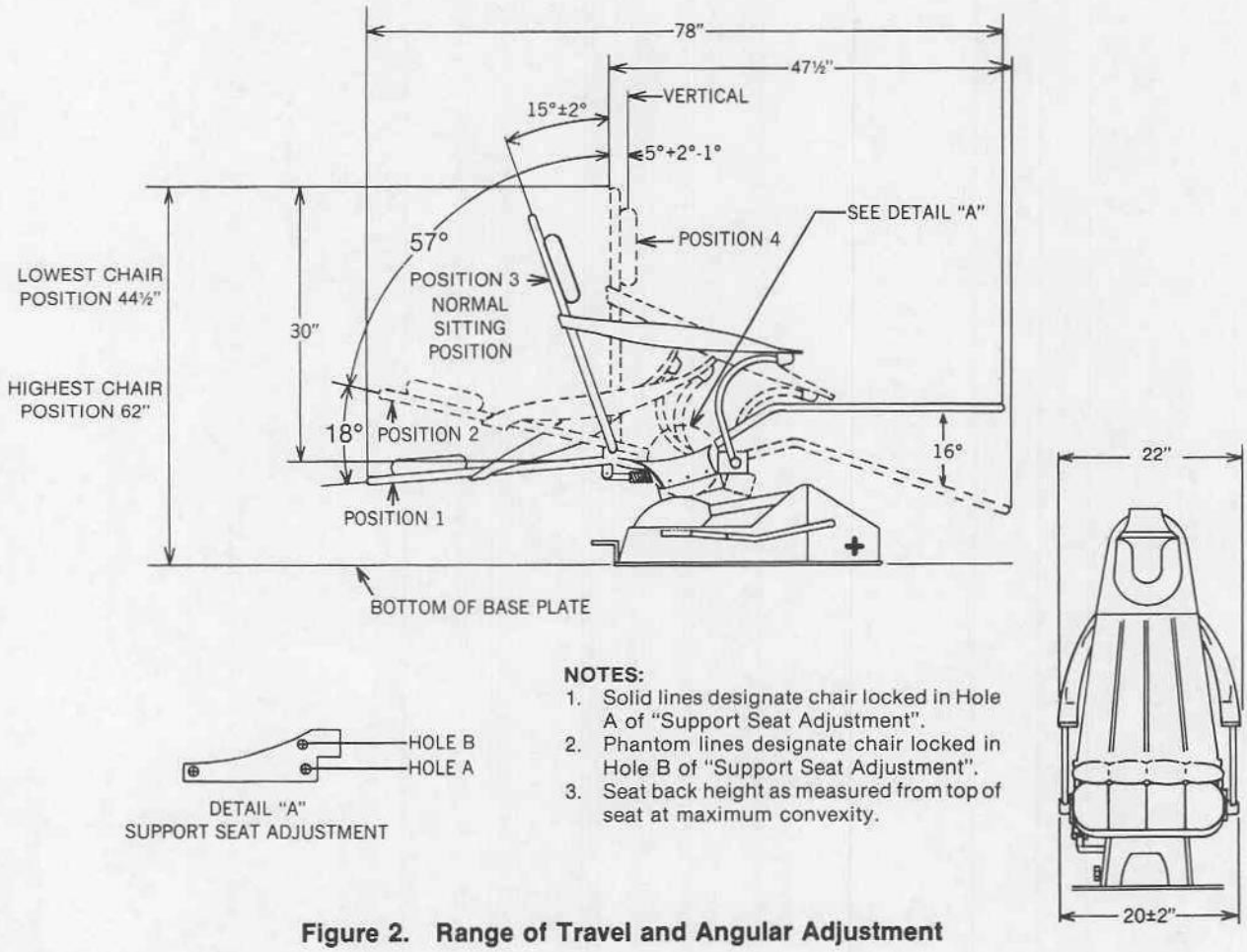
Chair: Seat tilt - horizontal to approximately 17° below horizontal as measured on toe section.

Back: Tilts from upright sitting position within 15° of vertical downward through 57° to approximately 18° above horizontal as measured with seat and toe in horizontal position.

Base: The height range measured from the floor to the seating area of the seat is 12-1/2" at its lowest position to 30-1/2" at highest position.

Stool: The stool is adjustable from 18" at its lowest position to 23" at its highest position in one inch increments.

Case: The inside dimension of the case is 36-1/2" length, 21-1/4" wide, and 18" height.



NOTES:
1. Solid lines designate chair locked in Hole A of "Support Seat Adjustment".
2. Phantom lines designate chair locked in Hole B of "Support Seat Adjustment".
3. Seat back height as measured from top of seat at maximum convexity.

Figure 2. Range of Travel and Angular Adjustment

Section II. INSTALLATION, OPERATION, and REPACKING

A. UNPACKING and ASSEMBLY (Refer to figures 3 and 4)

1. Release the ten (10) spring clamps on the exterior of the fiberglass container.
2. Grasp the handles at each end of the container top and lift it off the container base. Place the container top aside for use when repacking module.
3. Remove the strap (figure 3) binding the stool seat and base to the chair.
4. Remove the stool seat and base and set aside.
5. Remove the chair toe section (figure 3) and install it in the end of the chair seat frame.
6. Fasten upholstery snap tabs to secure toe section to chair seat.
7. Remove the connecting pin from the Hydrolok® actuator and safety link. Allow the safety link to hang free.

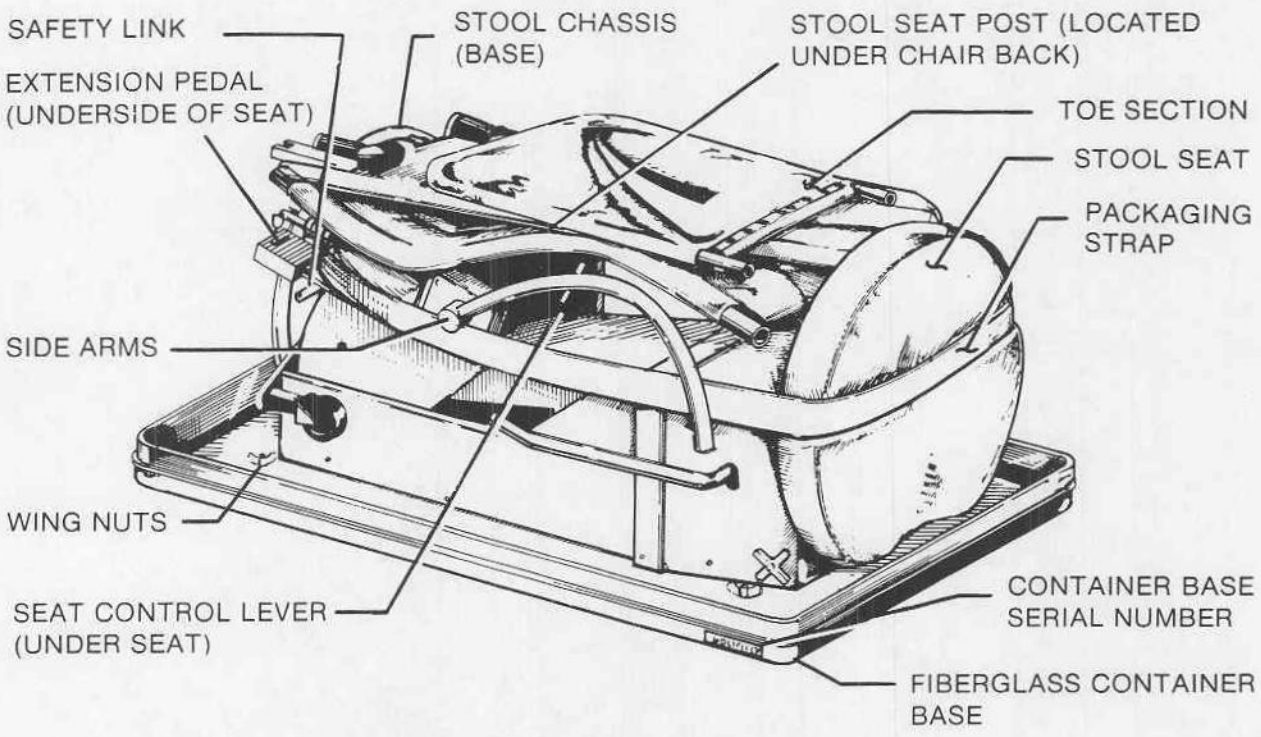


Figure 3. Packaged Position

8. Lift the chair back section to its upright position.
9. Lift the Hydrolok actuator and fit it into the chair back frame yoke. The end of the actuator may have to be turned slighty to align its holes with those in the yoke.
10. Insert the connecting pin through the yoke and actuator. Lock the pin in place with the attached clip.

DO NOT ATTEMPT TO USE A SUBSTITUTE PIN.

11. Pull the spring-loaded arms back and fit the ends of the patient arm supports over the ends of the arms.

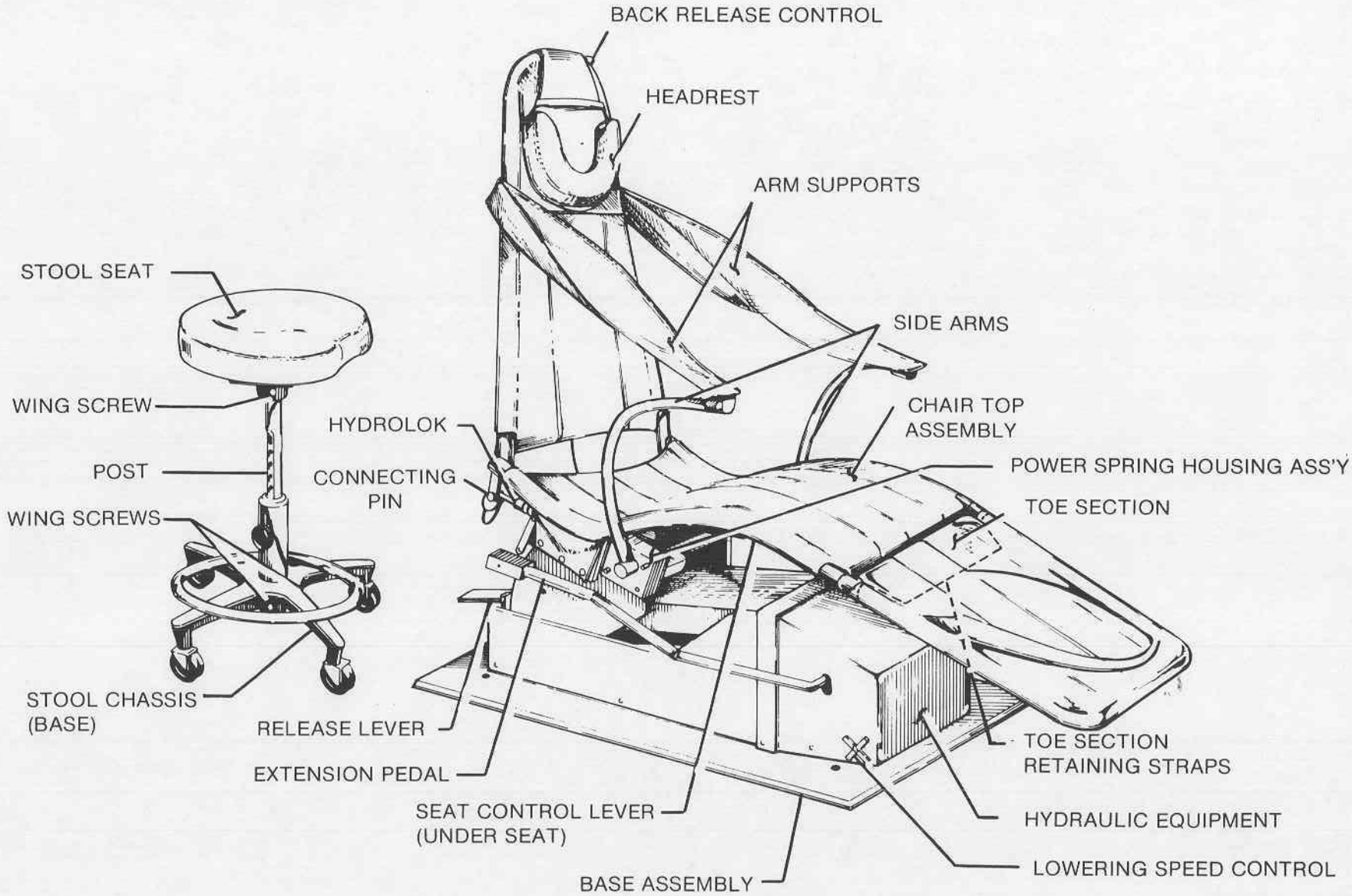


Figure 4. Operative Position

12. Remove the stool adjustment shaft and post assembly from the chair seat.
13. Loosen the wing screws on the stool base hub. Remove the stool adjustment shaft and post assembly from its protective bag and insert the post assembly into the base. Tighten the wing screws to secure the post assembly to the stool base. (Keep the protective bag for reuse in repacking).

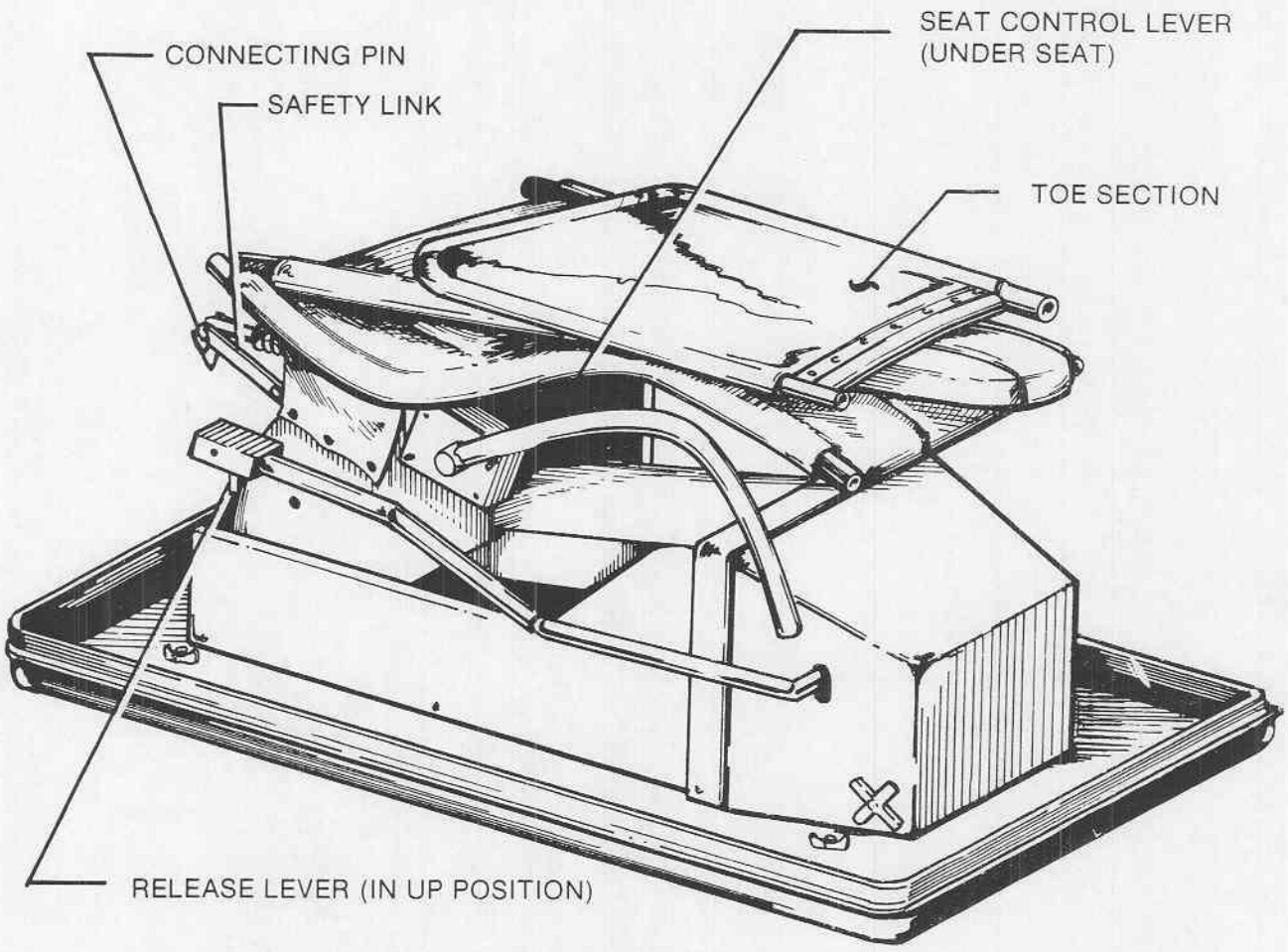


Figure 5. Collapsed Position

14. Loosen the wing screw on the stool seat casting. Install the stool seat on the adjustment shaft making certain that the bearing is properly seated in the bearing race (in the stool seat casting). Tighten the wing screw to secure the seat to the adjustment shaft.

15. Remove the extension pedal from its clips under the chair seat frame and install it on the pump extension (figure 3).
16. Fold the base release pedal out.
17. Disengage the seat control lever and tilt the chair back, slightly, to the operating position. Engage the lever to lock the chair in this position.

B. PERMANENT INSTALLATION

1. If permanent placement of the chair is desired, the chair and base are removable from the lower portion of the fiberglass container.
2. Pump the extension pedal to bring the chair to its maximum height.
3. Remove the large wing nuts securing the base plate to the fiberglass container.
4. Unsnap and remove the toe section from the chair seat frame.
5. Lift the combination chair and base from the container and place in the desired location.
6. Replace the toe section.
7. For additional stability the base plate may be anchored to the floor (depending on floor construction).

C. OPERATION

1. Before seating the patient, adjust the speed of descent for the base. Pump the chair to its maximum height and close the base descent speed control by turning the knob (figure 4) fully clockwise.
2. Open the speed control slightly (approximately one turn counter-clockwise) and depress the release lever (figure 4). Repeat this step (opening the speed control in small increments and depressing the release lever) until a desirable rate of descent for the base is achieved. After completing this adjustment the patient may be seated.
3. Pull back on either spring-loaded arm to allow patient entry.
4. Pump the chair up to the desired operating height.
5. Adjust the headrest to accommodate the patient and position the oral cavity.
6. Depress the back release control button and recline the back section of the chair to the desired operating position.
7. The operator stool seat height may be adjusted by pulling out the adjustment stop and raising or lowering the seat to a comfortable position.
8. To allow the patient to exit, depress the back release control button and raise the back section to near vertical position. Depress the release lever and lower the base. Pull back on either spring-loaded arm and the patient may exit to that side of the chair.

D. DISASSEMBLY FOR REPACKING

1. Lower the base fully.
2. Unsnap the upholstery tabs securing the toe section to the chair seat. Remove the toe section.
3. Disengage the seat control lever and pivot the chair toward the toe section (figure 4). Engage the seat control lever in the lowest position.
4. Depress the back release control button and position the back section so that the holes in the end of the Hydrolok actuator align with the hole in the safety link.
5. While supporting the back section, remove the connecting pin from the end of the actuator.

CAUTION: Be sure the above is accomplished before proceeding so that the stool saddle seat will properly fit. If back release control button is accidently depressed before the safety link is secured, it will be necessary to reassemble the chair back to power actuator to acquire the proper position of the actuator in relationship to the safety link.

6. Align the safety link with the actuator and replace the connecting pin (figure 5).
7. Loosen the wing screw in the saddle seat casting. Remove the seat from the adjustment shaft.
8. Loosen the wing screws in the stool base hub. Remove the adjustment shaft and post assembly from the stool base.
9. Place the adjustment shaft and post assembly in its storage bag. Place the storage bag on the chair seat.
10. Disengage the patient arm supports from the spring-loaded arms. Fold the supports and place them in the chair seat.
11. Fold the back section over the chair seat.
12. Position the stool seat at the front of the chair base and the stool base at the rear of the chair base (with casters toward chair) as shown in Figure 3.
13. Bind the stool seat and stool base to the chair with the web strap (figure 3).
14. Place the toe section on top of the chair back section (figure 3).
15. PLACE THE OPERATING MANUALS ON TOP OF TOE SECTION.
16. Place the fiberglass container top over the module. Secure the top to the container base with the spring clamps.

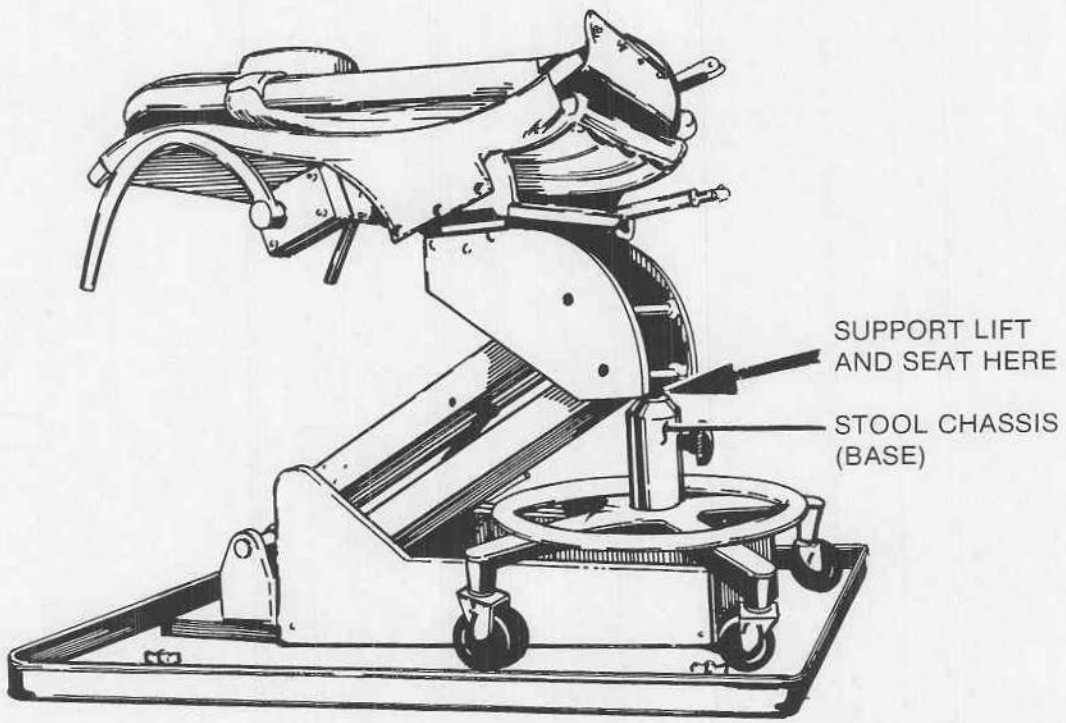


Figure 5A. Lift and Seat Supported by Stool Base for Hydraulic Repairs

Section III. FIELD SERVICE INSTRUCTIONS
PORTABLE FIELD MODULE
MODEL CM-185

A. ROUTINE MAINTENANCE

1. Check for any oil on the base plate, around base covers or in the container bottom section. A light oil film may develop and can be wiped off. If excessive oil is observed or is frequently appearing, the support pump assembly (figure 8) should be examined for leaks.
2. Keep the unit free of dust and debris by dusting or vacuuming. The upholstery may be wiped with a damp cloth and most stains may be removed with a mild household soap (liquid dish soap or bath soap). Do not use excessive water in cleaning and wipe cleaned areas dry.
3. When disassembling and repacking unit, be sure that all components, including the Installation and Repair Manual, are repacked.

B. BASE ASSEMBLY (See Figure 7) This structure is sound and should require a minimum of service. The nylon bearings in the pivot points of the lift and the pivot pins are lightly coated during initial assembly with S.A.E. 30 machine oil and should not require further lubrication.

1. Should a need arise to replace a lift arm pivot bearing, this may be accomplished as follows:
   a) Raise the chair about 4/5 of the way to maximum height.
   b) Tip chair and base over on their side.
   c) Loosen set screw at each end of the hinge pin, that rests in the faulted bearing, and slide the pin out.
   d) Slide lift arm out of place, remove the faulted flanged nylon bearing and replace it with a new one lightly coated with S.A.E. 30 machine oil.
   e) Replace all components exactly in the reverse order from that stated above.
   Be very sure to re-tighten the set screws.
   Now tilt the base and chair upright again.

C. HYDRAULIC EQUIPMENT (See Figure 8). Normal wear of "O" rings, fatigue rupture of hoses and loss of oil are the only factors that affect the function of the hydraulic system. None of these factors are frequent, but require immediate attention because of loss of oil or improper lift function. If repairs are needed in this section, the complete support pump assembly should be removed from the base assembly. Remove the hydraulic system as follows:

1. With chair in the container bottom, and the unit placed on a work bench, pump the chair up in order to place the stool base as shown in Figure 5A. This will provide safe support for the chair and lift while the hydraulic system is removed. Depress release pedal to relieve hydraulic pressure.
2. Loosen 1/4 inch set screw locking the upper pivot pin of the hydraulic cylinder and remove the pivot pin. Note nylon bearings in upper cylinder clevis.
3. Remove two screws, with spacers, holding the release pedal actuating rod to the base plate.
4. Remove four screws holding the pump cover and remove cover.
5. Remove six hex nuts holding the hydraulic assembly to the base plate.
6. Lift the hydraulic assembly off of the mounting screws, bring the assembly forward and out from the base.

7. Repairs can now be made to the hydraulic system. If one "O" ring requires replacement, all rings should be replaced.
   a) To drain oil from the system, remove the bleed screw from the cylinder cap, place a clean can or beaker under the opening and pump excess oil from cylinder. Replace bleed screw. Disconnect hose at swivel fitting at pump end of hose. A 1/4 NPT plug placed into the swivel coupling will reduce oil loss at this point.
   b) The hydraulic cylinder is of the displacement type, having no formal piston packing and the only wear factor is the "O" ring in the cap (see figure 10). The cylinder and hose must be removed from the hydraulic system to disassemble and reassemble. Loosen the 1/4 set screw locking the lower pivot pin and push the pin out of the clevis. After cylinder removal, excess oil in the cylinder may be manually pumped out through the open end of the hose and cylinder may be disassembled. Carefully remove the nylon bearings from the piston rod end of the cylinder to slide the cylinder cap off.
   c) To replace faulted "O" rings in the pump assembly, access is best gained by removing the pump and reservoir from the hydraulic assembly base plate.
      1) Loosen two hex head screws holding the release valve actuating rod and spring. Maintain thumb and finger compression on the spring while removing this assembly.
      2) Remove the socket head screw locking the pump control lever to the foot control arm.
      3) Using a flat tip screwdriver to lever the spring tension off of the pump control lever, slide the control lever toward the release piston and then slowly release the tension on the piston pump spring.
      4) Remove the hex head screw anchoring the pump spring and remove the spring from the pump piston stop.
      5) Turn the support assembly on its side and remove the six flat head slotted screws holding the pump and reservoir to the support base.
      6) The "O" rings may be replaced by removing the pump piston and release valve stem inserts from the pump body.
      7) The reservoir outlet fitting (Key 24, Figure 8) includes a wire cloth filter. If there is indication of oil contamination, this fitting should be removed and the filter cleaned.
   d) Reassemble the hydraulic system by reversing the disassembly steps given above.

CAUTION

When reinstalling the pump piston and insert, insure that the 3/16 inch ball (Key 14, Figure 9) is seated under the pump piston.

D. CHAIR TOP ASSEMBLY

The upholstery cover of this assembly including the toe section protective cover is slipped over a tubular frame and fastened by means of snaps appropriately placed to prevent sags and puckers. It is, therefore, very simple to replace any section of the upholstery that is damaged or worn out in service. The operation is quickly accomplished both for removal and replacement.

1. The power spring housing assemblies (See Figure 4, Page 5; Part Numbers 3519-009 left and 3519-010 right) require little to no maintenance. Each housing contains one power spring (Part Number 2605-027), one inner nylon bearing (Part Number 1658-017) and one outer nylon bearing (Part Number 1658-018).

E. SEAT CONTROL

This control provides two tilt positions by means of pins that engage appropriate holes in the tilt casting at each side of the chair. A small quantity of machine oil applied to the lever arm pivots every six months will keep these operating smoothly; also apply a small quantity of petroleum jelly to the slide pins every six months. In warm humid areas the frequency of these applications may have to be increased, depending upon the severity of the local conditions. Replacement of parts should not normally be necessary but when required, components may be replaced by removing attaching shoulder bolts with a screwdriver or Allen wrench.

F. HYDROLOK

This unit is an integral assembly that is not capable of disassembly; it must therefore be replaced as a complete unit. The control cable may be separated from the cylinder, however, after both have been removed from the chair. It is therefore possible to replace either the cylinder or the control cable as required.

To remove the hydrolok assembly, remove the connecting pin and the nut at "A" (see figure 6). To reassemble, follow the foregoing instructions in the reverse direction.

G. GENERAL

Upon completion of any repair certain adjustments may be necessary to restore satisfactory performance. Spongy operation is usually due to air trapped in the hydraulic system.

1. Removal of trapped air in the hydraulic system may be accomplished by one of two methods: if the amount is small it will usually purge itself after a few operations of the base through its full height adjustment. If this means proves inadequate, loosen a screw that appears at the top end of the lift cylinder at "B" (see Figure 6) and pump the foot pedal until a small amount of oil issues; at this point, re-tighten the screw and wipe the leakage oil from the cylinder.
2. Adjustment of the lowering speed control is accomplished by turning the control knob (see Figure 5) clockwise to reduce the speed of decent and, conversely, turn the knob counter-clockwise to increase the speed of decent.
3. To add oil to the reservoir, remove the plug at "C" (see Figure 6) and raise the chair to its maximum height. Check level of oil by inserting the tip of a screwdriver or some other instrument. Oil level should come up to 1/2 inch depth. If the depth is less that 1/2 inch, add enough oil to attain that level.

   Replace the plug and tighten, then lower the chair. This method will always assure a positive pressure in the tank. This sufficient pressure is necessary to assure closing of ball valves and to insure oil flow to the pump chamber at a sufficiently rapid rate to insure satisfactory operation.

H. STOOL

The stool seat is a complete assembly. It can be removed by loosening the wing screw located on the casting.

FIELD CHAIR, BASE & STOOL (Refer to Figure 6)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	3614-085	Saddle Seat (Stool)	1
2	2586-007	Post (Stool)	1
3	3552-004	Stop Assembly for Stool	1
4	2529-004	Caster (Stool)	4
5	2583-033	Connecting Pin (Hydrolok)	1
6	2689-001	Hydrolok Assembly	1
7	2688-001	Back Release	1
8	3561-004	Headrest	1
9	3638-034	Arm Support	1
10	3542-001	Chair Back Cover	1
11	3542-002	Chair Seat Cover	1
12	3543-021	Chair Foot Cover - Plastic	1
13	3542-003	Chair Foot Cover	1
14	3685-001	Toe Frame - Aluminum	1
15	3531-012	Back Frame - Aluminum	1
16	3614-007	Seat Frame - Aluminum	1
17	3519-010	Power Arm - Right	1
18	3519-009	Power Arm - Left	1
19	2524-002	Button Hydrolok	1
20	3582-002	Extension Pedal Assembly	1
21		Base Covers	
	2594-008	(a) End Shield, Aluminum	1
	2594-006	(b) Right-Hand Shield	1
	2594-007	(c) Left-Hand Shield	1
	2543-076	(d) Pump Cover	1
22	2591-052	Foot Ring, Stool	1
23	2510-011	Base, Stool	1
Not Shown	2533-029	Clamp, Foot Pedal Stowage	2
Not Shown	3608-007	Strap, Assembly Packing	1

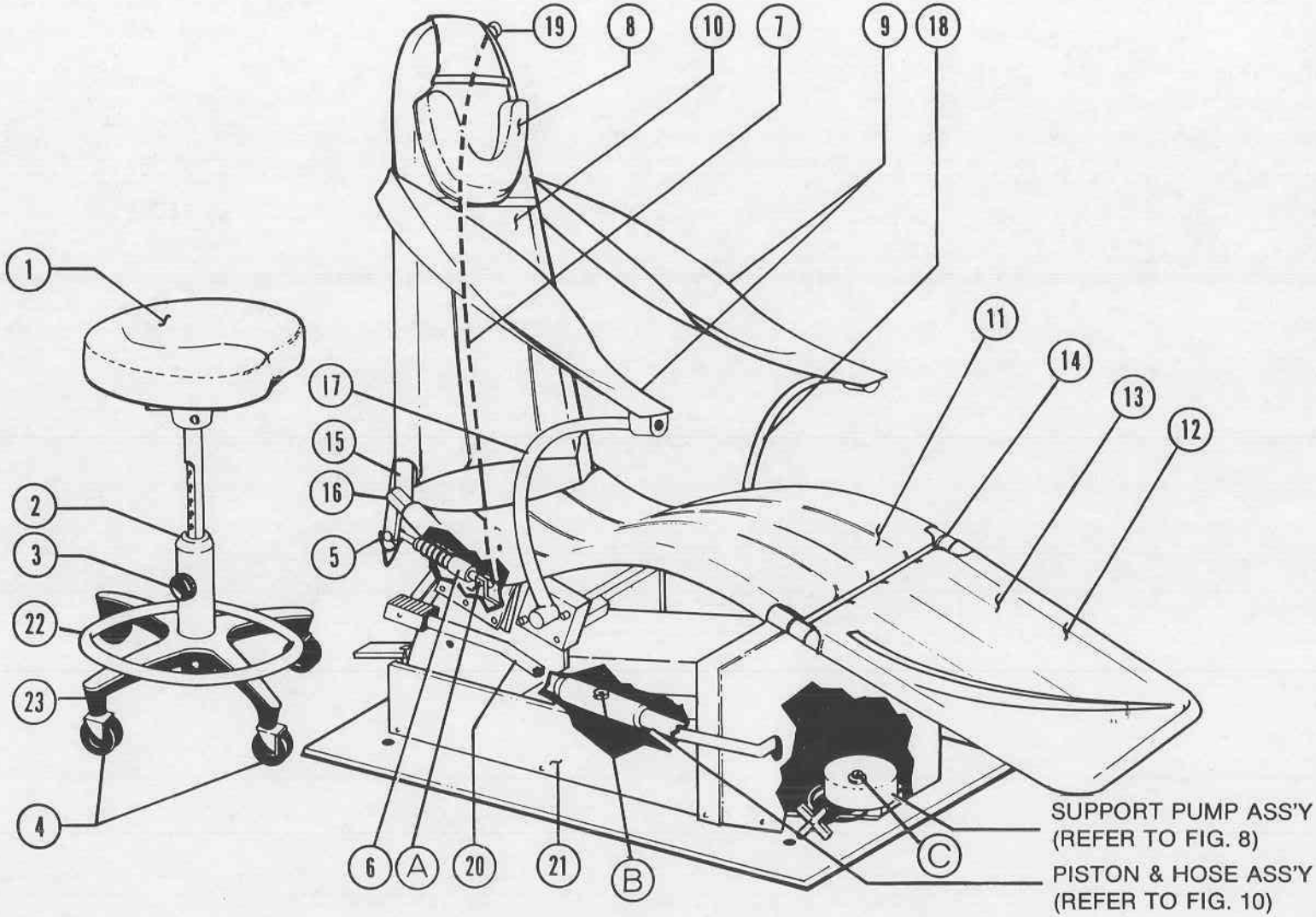


Figure 6. Field Chair, Base, and Stool

BASE ASSEMBLY
MODEL CM-185 FIELD CHAIR BASE (Refer to Figure 7)

ITEM	PART NO.	DESCRIPTION	QUANTITY
1	2534-005	Support, Pivot - Left-Hand	1
2	2634-004	Channel, Lift Arm	2
3	1622-004	Screw, Flat Hd. Slotted 1/4-20 x 1-1/4	6
4	2650-009	Rod, Lift Arm (Long)	3
5	2603-023	Spacer, Support	3
6	1658-009	Bushing, Flanged 5/8 bore x 9/16 long	10
7	2534-010	Support - Left-Hand	1
8	1625-002	Set Screw, 1/4-20 x 1/4 Socket Head	9
9	2644-004	Pivot, Chair	1
10	1615-025	Screw, Hex Head Cap 3/8-16 x 3/4	4
11	1629-004	Screw, Pan Head Slotted #8-32 x 3/8 Type 1	1
12	2650-010	Rod, Seat Adjust 3/8 diameter Steel	2
13	2605-025	Spring, Seat Adjust	1
14	1626-001	Shoulder Bolt- Slotted Head	4
15	1626-008	Shoulder Bolt - Socket Head	3
16	2652-005	Lever, Seat Adjust	1
17	2501-056	Arm, Seat Adjust	2
18	1603-012	Spring Pin, 3/16 diameter x 7/8 long	1
19	1658-020	Bushing, Flanged Nylon 3/8 ID x 3/8 long	2
20	2642-020	Screw, Shoulder Hex Hd. .498/.497 dia. x .265	2
21	1608-001	Screw, Hex Head Taptite 1/4-20 x 5/8	1
22	2571-007	Link, Safety 1/8 x 3/4 steel	1
23	2534-011	Support - Right-Hand	1
24	2650-007	Rod, Piston Support 3/8 Steel	1
25	3638-042	Support, Pump Assembly (See Figure 8, Page 17)	1
26	1658-013	Bushing, Flanged Nylon 9/16 bore x 13/32 long	4
27	2584-073	Plate, Floor	1
28	2650-008	Rod, Lift Arm (short)	2
29	2534-004	Support, Pivot - Right-Hand	1
30	1622-014	Screw, Flat Head Phillips 1/4-20 x 1	14
31	1605-019	Hex Nut, 1/4-20	14
32	3582-002	Pedal Assembly	1
33	1622-015	Screw, Flat Head Machine 1/4-20 x 3/4	2
34	2644-006	Pivot, Lever 3/8 steel	2
35	1601-004	Dowel Pin, 1/4 diameter x 1-1/4 long	1
36	2652-010	Lever, 1/2 x 1/2 steel	1
37	2582-012	Pedal, Foot 1/2 x 1 steel	1
38	1603-016	Spring Pin, 1/4 diameter x 1" long	1
39	2603-034	Spacer, 1/4 OD x .215/.210 long	2
40	1629-010	Screw, Hex Head Slotted #8-32 x 1/2	2
41	2509-025	Bar, Pump Release 1/2 x 3/16 steel	1

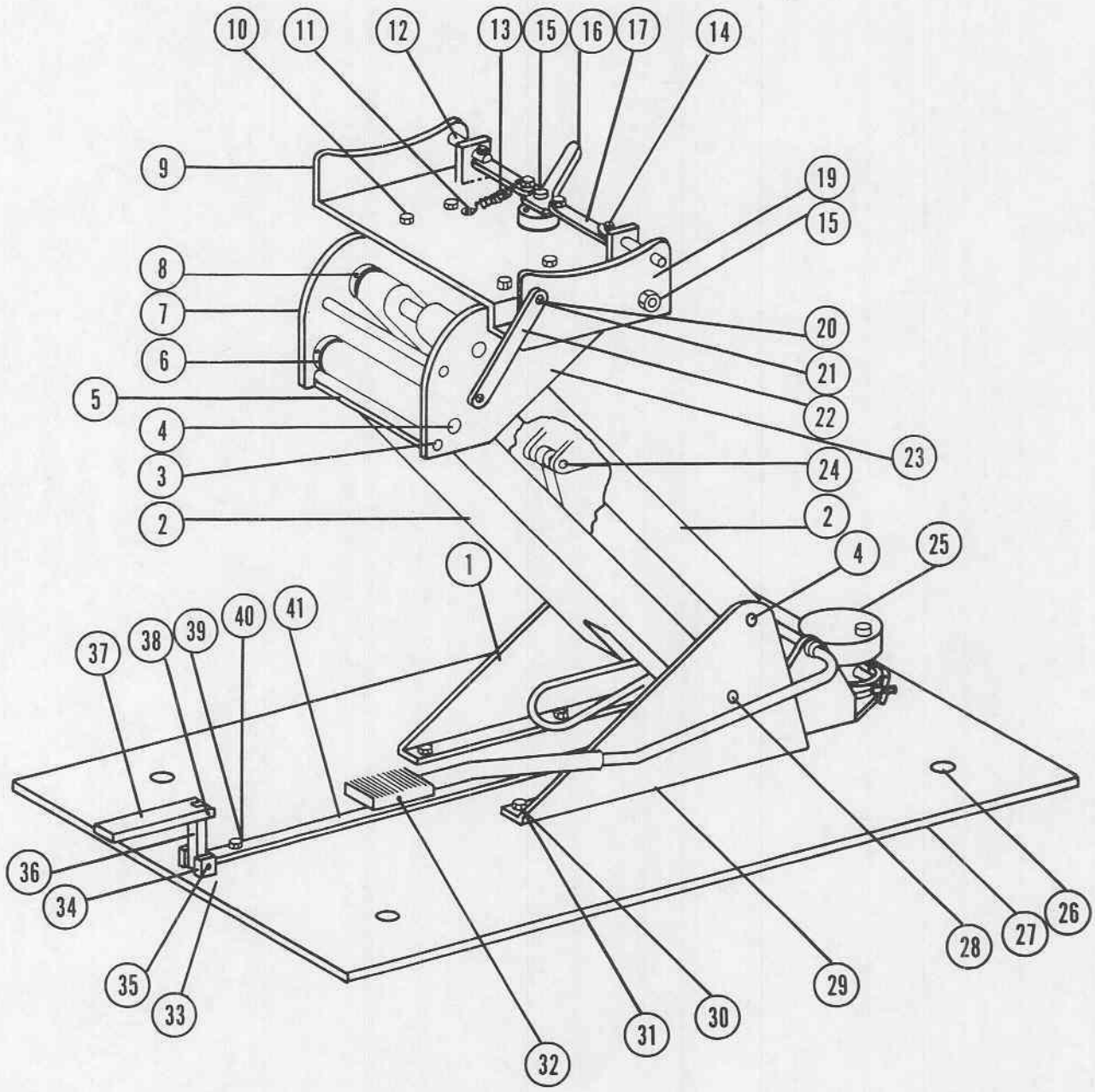


Figure 7. Base Assembly

SUPPORT PUMP ASSEMBLY
MODEL CM-185 FIELD CHAIR BASE (Refer to Figure 8)

ITEM	PART NO.	DESCRIPTION	QUANTITY
1	2501-055	Arm, Foot Control	1
2	1630-004	Set Collar and Set Screw	2
3	1622-010	Screw, Flat Head Slotted #10-32 x 5/8	6
4	1620-005	Screw, Round Head Slotted #10-32 x 1/4	3
5	3687-001	Pump Assembly (See Figure 9, Page 19)	1
6	1637-001	Plug, Flush 1/4 NPT	1
7	3673-004	Reservoir Final Assembly	1
8	1658-014	Flanged Bushing 5/8 bore x 3/8 long - Nylon	2
9	1616-070	Screw, Socket Head 1/4-20 x 15/16	1
10	2652-012	Lever, Pump Control Weldment	1
11	2534-023	Support, Rod Casting	1
12	1608-003	Screw, Taptite Hex Washer 1/4-20 x 3/4	2
13	2650-012	Rod, Release 1/2 diameter, steel	1
14	2605-029	Spring, Lee #LC072J-4	1
15	2584-086	Plate, End 1/4" steel	1
16	1615-024	Screw, Hex Head Cap 1/4-20 x 5/8	1
17	3686-005	Piston & Hose Assembly (See Figure 10, Page 21)	1
18	1615-024	Screw, Hex Head 1/4-20 x 5/8	1
19	2605-021	Spring, Piston Pump	1
20	1625-002	Set Screw, 1/4-20 x 1/4	1
21	2534-009	Support Pump - Cast Aluminum	1
22	2650-007	Rod, Piston Support 3/8 dia. Stressproof	1
23	3548-001	Fitting Assembly	1
24	2678-029	Elbow, 1/8 x 90° Male	1

NOTE: For complete Support Pump Assembly containing all parts ORDER #3638-042

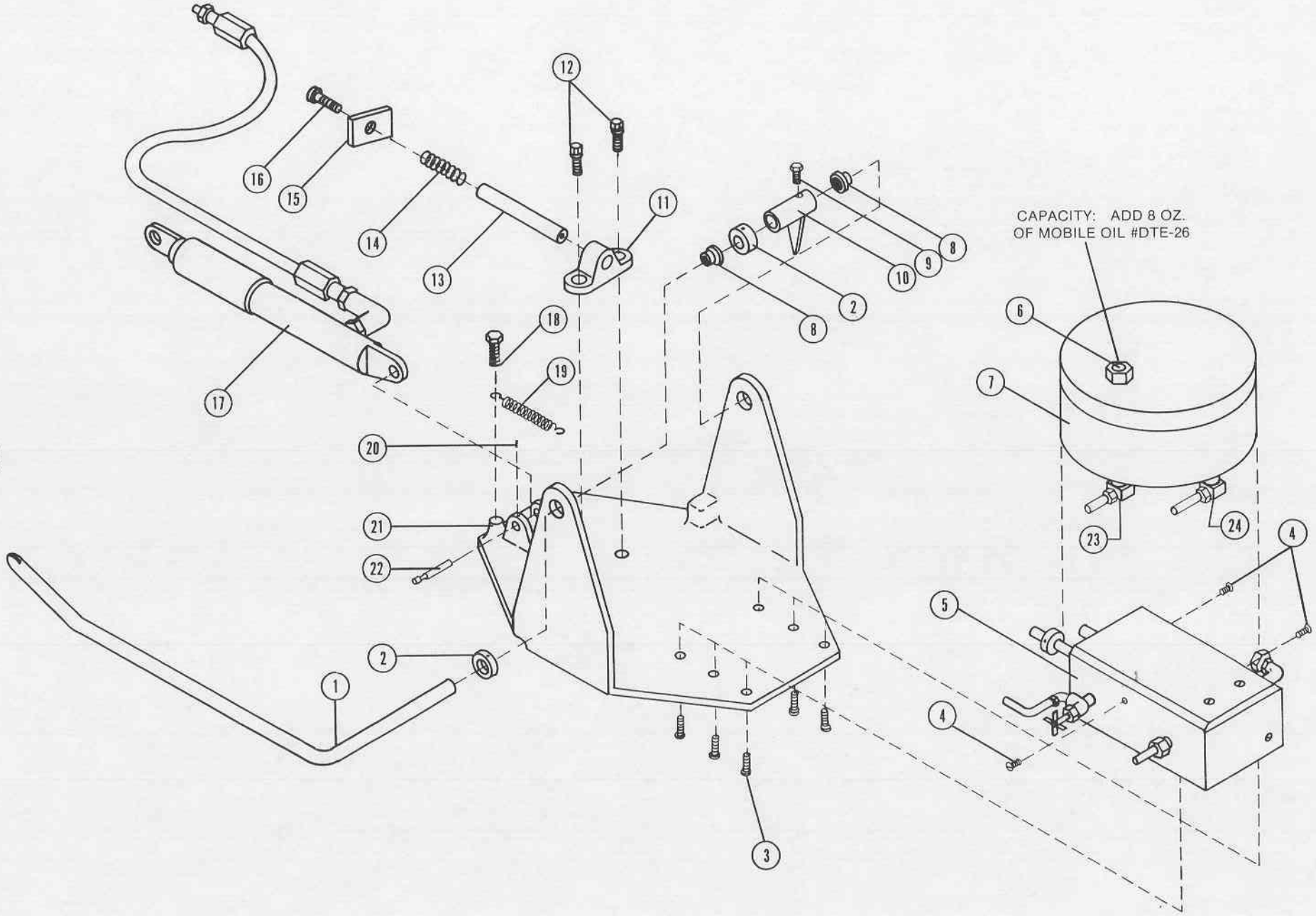


Figure 8. Support Pump Assembly

PUMP ASSEMBLY
MODEL CM-185 FIELD CHAIR (Refer to Figure 9)

ITEM	PART NO.	DESCRIPTION	QUANTITY
1	1603-007	Spring Pin, 5/32 x 1	1
2	2673-005	Stop, Piston Rod, 1-1/8 diameter steel	1
3	2650-004	Piston Rod	1
4	2591-008	"O" Ring (70 Durometer Parker #110 or equal)	2
5	2564-005	Insert, Pump Piston 7/8 diameter 12L14 steel	1
6	2678-029	Elbow, 1/8 x 90° Male	1
7	1117-051	Tube, 1/4 OD x 4-1/2 long	2
8	2625-002	Metering Valve (Republic 151B-5-1/8 B)	1
9	2540-011	Fitting, Straight 1/8 NPT Male	1
10	2515-016	Pump Body	1
11	1637-001	Flush Plug, NPT 1/4-18 Socket Head	1
12	2605-022	Spring, Pump Release	1
13	1611-004	5/16" Steel Ball	2
14	1611-003	3/16" Steel Ball	1
15	1637-002	Flush Plug, NPT 1/8-27 Socket Head	2
16	2605-012	Spring (check valve)	1
17	2678-003	Elbow 90°-1/4-18 NPT Male with Female Pipe Swivel (Parker #2107-4-4)	1
18	2591-009	"0" Ring (Parker #17 or equal)	2
19	2564-004	Insert, Pump Release	1
20	2650-003	Rod, Pump Release	1

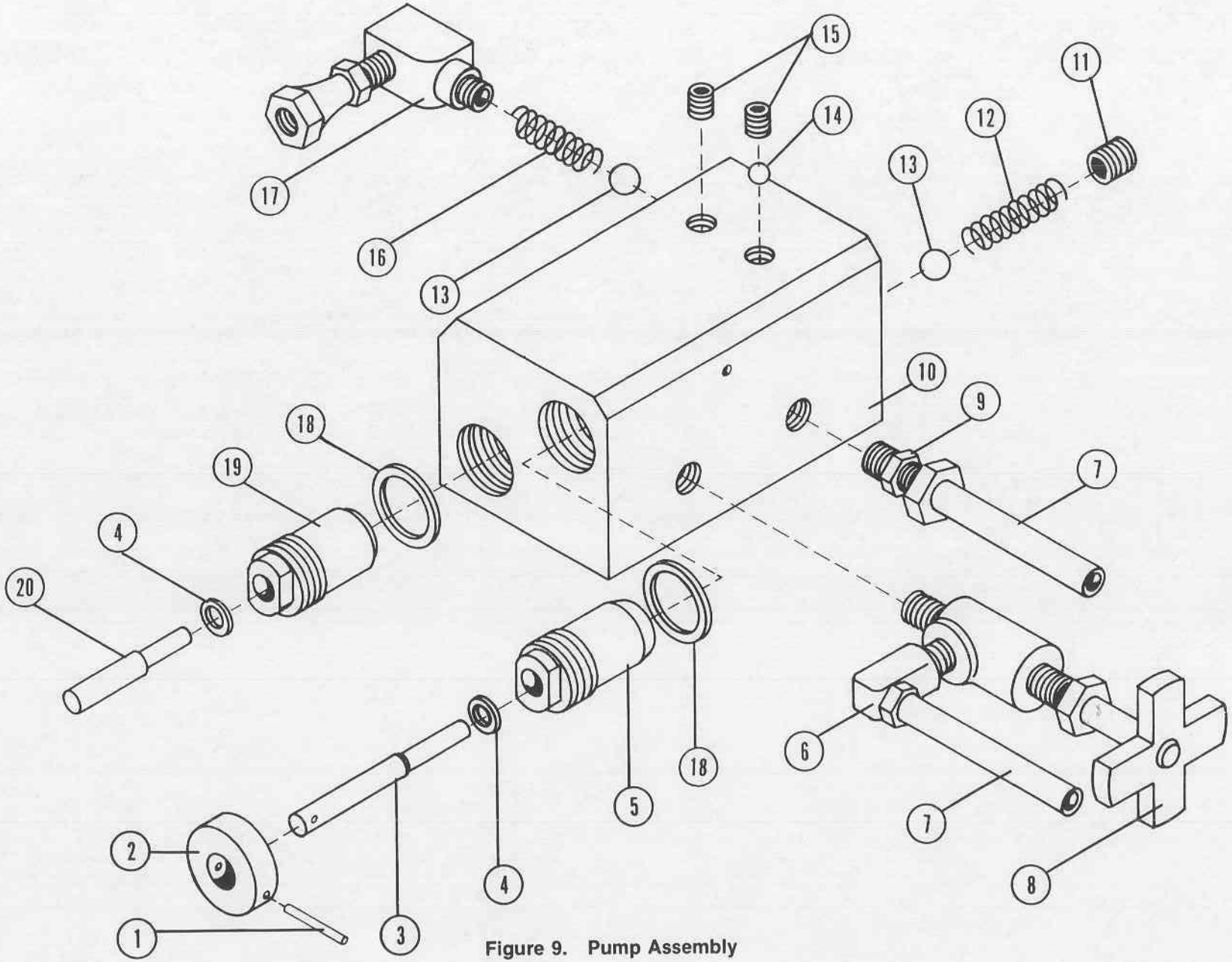


Figure 9. Pump Assembly

PISTON & HOSE ASSEMBLY
MODEL CM-185 FIELD CHAIR BASE (Refer to Figure 10)

ITEM	PART NO.	DESCRIPTION	QUANTITY
1	1658-030	Flanged Bushing, 3/8 bore x 7/32 Nylon	4
2	2678-001	90° Elbow, Fludar #PF 201-4	1
3	3676-001	Hose Assembly	1
4	2526-015	Cap Cylinder	1
5	1624-004	Screw, Truss Head #10-32 x 1/4" long	1
6	2591-004	"O" Ring (Parker #8 or equal)	1
7	2591-005	"O" Ring (Parker #210 or equal)	1
8	2591-010	"0" Ring (Parker #2-022 or equal)	1
9	3683-002	Cylinder Rod Assembly	1
10	3686-003	Cylinder - Piston Weldment	1

21

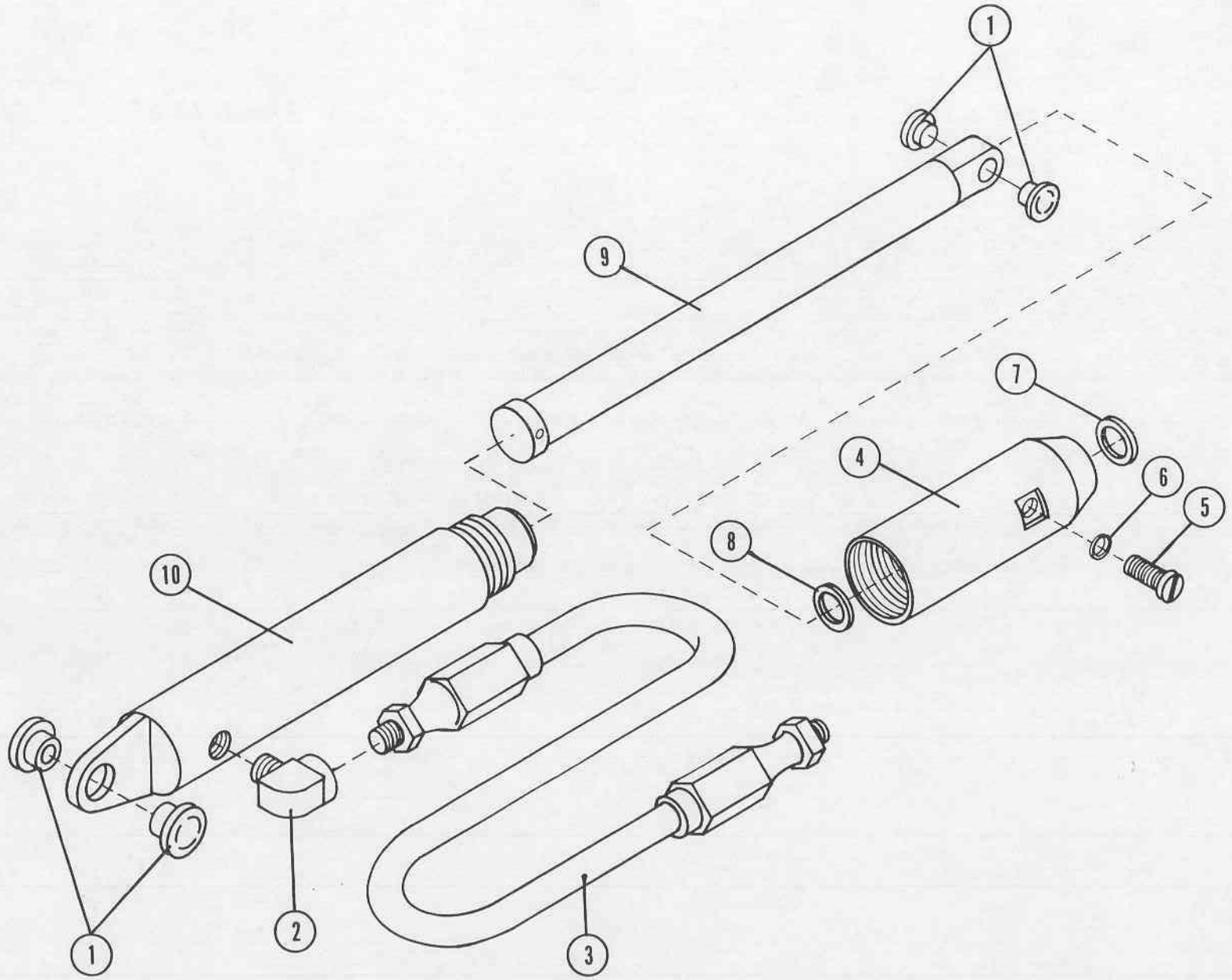


Figure 10. Piston and Hose Assembly

REPLACEMENT PARTS
for
CARRYING CASE

INDEX NUMBER	PART NUMBER	DESCRIPTION
1	2674-001	Case
2	2625-003	Valve, Air Relief
3	3570-001	Latch, Compression
4	1640-001	Wing Nuts, 1/2-13 NC
5	2626-009	Washer

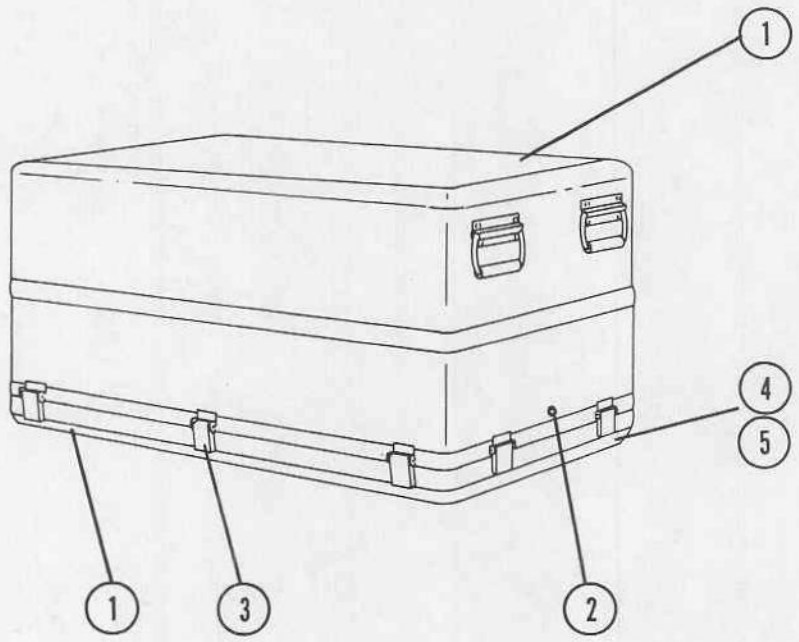


Figure 11. Carrying Case

T063

NOTE 1: Should the carrying case gasket seal require replacement, use Tubing NSN 4720-00-141-9067.

NOTE 2: Index number 2, part number 2625-003, Valve, Air Relief is not available from Syntex Dental Products. Source: Environmental Container System, Union City, CA, ECS # 25600130.

Addendum to:

Service Manual
Model CM-185 Field Chair and Stool
NSN 6520-00-181-7349
MFG: Syntex Dental Products
DEN-TAL-EZ Equipment

Additions: (a) Page 1, Table of Contents, add under column identified as SECTION, "ADDENDUM"; under last line of Section IV, add:
Additions, Changes.....23
MAC, MPL, ASL.....24-34

(b) Page 22, add after NOTE: NOTE 2: Index number 2, part number 2625-003, Valve, Air Relief is not available from Syntex Dental Products. Source: Environmental Container System, Union City, California, ECS #25000130.

Changes: Page 22, Replacement Parts for Carrying Case.

As reads: Note: Should the.....NSN 4720-00-141-9067

Should read: Note 1: Should the.....NSN 4720-00-141-9063

Instructions: Inside rear cover page, staple this addendum to include page 23 thru page 34. This addendum should stay with the service manual until superseded or deleted for the life of the end item. All previous service/parts manuals for this end item are superseded by this manual.

ADDENDUM

CHAIR AND STOOL UNIT, DENTAL OPERATING

6520-00-181-7349

PART I

MAINTENANCE ALLOCATION

SECTION I. INTRODUCTION

1. GENERAL. This appendix provides a summary of the maintenance operations for Chair and Stool Unit, Dental Operating. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

2. MAINTENANCE FUNCTION. Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean, preserve, drain, paint, or to replenish fuel, lubricants, hydraulic fluids or compressed air supplies.

d. Adjust. Maintain within prescribed limits by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to about optimum or desired performance.

f. Electrical Safety Test. To determine conformance to electrical safety parameters and cause corrections to be made or deficiencies reported.

g. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipment used in precision measurement. Consists of the comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

h. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

i. Replace. The act of substituting a serviceable like-type part, subassembly, model (component or assembly) for an unserviceable counterpart.

j. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module or component, assembly, end item or system.

k. Overhaul. That periodic maintenance effort (service and action) necessary to restore an item to a completely serviceable and operational condition as prescribed by maintenance standards (e.g., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.

l. Rebuild. Consists of those services and actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with the original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipment and components.

3. COLUMN ENTRIES (See Section II).

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies and modules with the next higher assembly.

b. Column 2, Component and Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in Column 2. When items are listed without maintenance functions, it is solely for purposes of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "worktime" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "worktime" figures will be shown for each category. The number of man-hours specified by the "worktime" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field

operating conditions. This time includes preparation time, troubleshooting time, and quality assurance and quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of Column 4 are as follows:

C - Operator/Crew
O - Organizational
F - Direct Support
H - General Support
L - General Specialized Repair Activity

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

4. TOOL AND TEST EQUIPMENT REQUIREMENTS (See Section III).

a. Line Item No. (LIN). This column lists the LIN applicable to the tool, tool kit, or test equipment item. This column line will be blank when no LIN applies.

b. National, or NATO Stock Number. This column lists the national, or NATO stock number of the specified tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

e. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

SECTION II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	L	(5) TOOLS AND EQPT	(6) REMARKS
00	Chair	Inspect	X	.5					
01	Pump Assembly	Inspect		.1					
		Test		.1					
		Replace		1.0				01,02	
		Repair		1.5				01,02	
		Overhaul		1.5				01,02	
02	Cylinder Assembly	Inspect		.1					
		Test		.1					
		Replace		.3				01	
		Repair		.5				01,02	
		Overhaul		.5				01,02	
03	Reservoir	Inspect		.1					
		Replace		.3				01	
03.1	Filter	Inspect		.2				01	
		Replace		.2				01	
04	Hydrolok Assembly	Inspect		.1					
		Replace		1.0				01	
04.1	Button, Hydrolok	Inspect		.1					
		Replace		.1				01	
		Repair		.1				01	
04.2	Back Release	Inspect		.1					
		Replace		.1				01	
05	Power Arm	Inspect		.1					
		Replace		.3				01	
		Repair		.3				01	
05.1	Arm Support	Inspect		.1					
		Replace		.1					

SECTION II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	L	(5) TOOLS AND EQPT	(6) REMARKS
06	Pump Release Assy	Inspect		.1					
		Repair		.3				01	
07	Seat Adjust Assy	Inspect		.1					
		Replace		1.0				01	
		Repair		.3				01	
08	Foot Section	Inspect		.1					
		Replace		.1					
08.1	Cover	Replace		.2				01	
09	Seat Cover	Inspect		.1					
		Replace		.2				01	
10	Back Cover	Inspect		.1					
		Replace		.2				01	
11	Head Rest	Inspect		.1					
		Replace		.2				01	
12	Stool Unit	Inspect		.1					
		Repair		.2				01	
13	Container	Inspect		.1					
		Repair		.5				01,02	
13.1	Latch	Replace		.5				01,02	
13.2	Press. Relief Valve	Replace		.5				01	
13.3	Gasket	Replace		.5				01	

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS

LINE ITEM NO.	NATIONAL/NATO STOCK NUMBER	NOMENCLATURE	MAINT CAT	TOOLS OR TEST EQUIP REF CODE
W45334	5180-00-611-7923	Tool Kit, Medical Equipment and Repair (Individual) (SC 5180-8-CL-A14)	O,F,H	01
W45197	5180-00-611-7924	Tool Kit, Medical Equipment Maint. and Repair (Organizational) (SC 5180-8-CL-A10)	O,F,H,	02

ADDENDUM, PART II
REPAIR PARTS
Section I Introduction

1 SCOPE. This section contains a Mandatory Parts List (MPL) and an Authorized Stockage List (ASL). It identifies stockage of repair parts at designated levels in accordance with AR 40-61.

2 GENERAL. This addendum identifies repair parts for Mandatory Parts List (MPL) and Authorized Stockage List (ASL). Stockage of repair parts is necessary to insure readiness of the supported equipment. MPL is part of the Prescribed Load List (PLL) that differs from other PLL as follows:

a. Stockage of MPL's is mandatory for all active Army units. All repair parts on the MPL must be on hand or on order at the unit.

b. Stockage of MPL is mandatory for D to D + 60 deploying Reserve Component Forces whose TO&E are listed in the combat PLL master TO&E list. Stockage of MPL for other Reserve Component Forces is at the descretion of the unit commander.

c. In accordance with AR 710-2, paragraph 2-15g, basic load repair parts for National Guard Units must be approved by the Chief, National Guard Bureau. Operational loads must be approved by the respective State Adjutant General.

d. MPL items will not be banded and stored for readiness, but rather, will be used as needed and reordered for stock.

e. MPL items do not make up the total PLL. Other parts may be stocked and MPL quantities increased when supported by sufficient demands.

f. ASL identifies demand supported repair parts stocked at the supporting supply activity to facilitate timely replenishment of supported unit PLL.

3 EXPLANATION OF COLUMNS.

a. Heading.

(1) End Item. Lists the military nomenclature of the end item for which repair parts are listed.

(2) Date. Lists date the MPL or ASL was developed or last updated.

(3) NSN. Lists the National (NATO) Stock Number of the End Item, of MCN if NSN has not been assigned.

(4) LIN. Lists the Line Item Number of the end item when applicable.

(5) Application Code. Lists application codes 1 through 4 to differentiate between various manufacturers.

(6) Manufacturer. Lists up to four manufacturers of the end item.

(7) FSCM. Lists the Federal Supply Code for Manufacturers of the manufacturer of the end item.

(8) Model. Lists the applicable manufacturer's model of the end item.

b. Repair Parts Listing.

(1) NSN. Lists the National (NATO) Stock Number of the part, when applicable.

(2) AC. Lists the appropriate application code to indicate which manufacturer model of the end item the repair part applies.

(3) Part Description. Lists the nomenclature and descriptive data of the repair part.

(4) U/I CU. Lists the cube of the repair part.

(5) U/I WT. Lists the weight of the repair part.

(6) Part Number. Lists the appropriate manufacturer's part number for the repair part.

(7) U/I. Lists the repair part unit of issue.

(8) Stockage Quantity (ASL).

(a) Corp MEDSOM. Lists the quantity recommended for stockage at the Corp MEDSOM.

(b) Commz MEDSOM. Lists the quantity recommended for stockage at the Commz MEDSOM.

(c) NonMED SSA. Lists the quantity recommended for stockage at the non-medical Supply Support Activity.

(9) Mandatory Stockage Qty. (MPL).

(a) 1-5: Lists quantity mandated for stockage to support one to five end items.

(b) 6-25: Lists quantity mandated for stockage to support six to 25 end items.

(c) 26-50: Lists quantity mandated for stockage to support 26-50 end items.

(d) 50+: List quantity mandated for stockage to support a density greater than 50.

SECTION II. MANDATORY PARTS LIST (MPL)

END ITEM Chair and Stool Unit, Dental Operating				DATE 31 Oct 83
NSN 6520-00-181-7349			LIN Z 14733 (Provisional)	
APPLICATION (AC)	MANUFACTURER	FSCM	MODEL	REMARKS Syntex formerly known as DEN-TAL-EZ.
CODE 1 CODE 2 CODE 3 CODE 4	Syntex Dental Products	25692	CM185, CM178	

NSN	AC	PART DESCRIPTION	U/I CU	U/I WT	PART NUMBER	U/I	1-5	6-25	26-50	50+
9150-00-364-7837	1	Lubricating Oil, Hyd., QT	00.051	0002.00	1126-001	CN	1	2	3	4
5340-01-044-6721	1	Latch, Compression	00.500	0020.00	3570-001	EA*	2	4	8	8
	1	O-ring, Parker 110			2591-008	EA	2	4	6	6
	1	O-ring, Parker 17			2591-009	EA	2	4	6	6
	1	O-ring, Parker 8			2591-004	EA	1	2	3	3
	1	O-ring, Parker 210			2591-005	EA	1	2	3	3
	1	O-ring, Parker 2-022			2591-010	EA	1	2	3	3
	1	Spring, Pump Release			2605-022	EA	1	2	3	3
	1	Spring, Check Valve			2605-012	EA	1	2	3	3
	1	Tube, 1/4" X 4-1/2"			1117-051	EA	1	2	3	4
	1	Fitting Assembly			3548-001	EA	0	1	1	2
	1	Hydrolok Assembly			2689-001**	EA	0	1	2	3
4720-00-141-9063	1	Tubing, Non Metallic	05.000	0050.00	None	FT*	0	10	20	20
	1	Hose Assembly			3676-001	EA	0	1	2	2

* Advice Code 2D, specify exact amount.
** Hydrolok Assembly Part #2689-001 is available from P. L. Porter, Los Angeles, CA., Part #SL-5600 Rev D.

SECTION II. AUTHORIZED STOCKAGE LIST (ASL)

END ITEM Chair and Stool Unit, Dental Operating | DATE 31 Oct 83

NSN 6520-00-181-7349 | LIN Z 14733 (Provisional)

APPLICATION (AC)	MANUFACTURER	FSCM	MODEL	REMARKS
CODE 1 CODE 2 CODE 3 CODE 4	Syntex Dental Products	25692	CM185, CM178	Syntex formerly known as DEN-TAL-EZ.

NSN	AC	PART DESCRIPTION	U/I CU	U/I WT	PART NUMBER	U/I	STOCKAGE QTY CORPS MEDSOM	STOCKAGE QTY COMMZ MEDSOM	STOCKAGE QTY NonMed SSA
9150-00-364-7837	1	Lubricating Oil, Hyd.,QT	00.051	0002.00	1126-001	CN	2	2	
	1	Button Hydrolok			2524-002	EA	1	1	
	1	Back Release			2688-001	EA	1	1	
	1	Connecting Pin, Hydrolok			2583-033	EA	2	2	
	1	Tube, 1/4" X 4-1/2"			1117-051	EA	2	2	